

**ABSTRACT**

A method and apparatus are provided for extracting information from a user's memory that will be easily recalled during future authentication yet is hard for an attacker to guess. The information might be a little-known fact of personal relevance to the user or the personal details surrounding a public event. The user is guided to appropriate topics and forms an indirect hint that is useful to the user yet not to an attacker. Information extraction techniques verify that the information is not easily attacked and to estimate how many bits of assurance the question and answer provide. The information extracted may be, e.g., Boolean (Yes/No), multiple choice, numeric, textual, or a combination of the foregoing. The enrollment process may schedule the sending of one or more reminder messages to the user containing the question (but not the answer) to reinforce the memory of the user.